

# An Innovative Exploration of Labor Education Practice Models in Applied Universities in the New Era

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**Abstract:** Against the backdrop of the new era, labor education has emerged as a pivotal link in cultivating high-quality applied talents. This paper takes the "Three-Color Guidance, Three-Park Interaction, and Three-Entity Co-Education" labor education practice project at Xuzhou University of Technology as a case study, delving into its project objectives, practical content, implementation pathways, and achieved outcomes. Grounded in regional industrial demands, the project optimizes teaching content through multi-dimensional linkage, integrates internal and external resources, and constructs a holistic educational closed-loop, providing a replicable and scalable "Xuzhou Model" for labor education reform in local universities. This model holds significant implications for driving educational innovation, serving society, and fostering individual development.

**Keywords:** Labor Education; Applied Universities; Three-Color Guidance; Three-Park Interaction; Three-Entity Co-Education

## 1. Introduction

With the development of new-quality productive forces, the role of labor education in cultivating high-quality applied talents has become increasingly prominent. Traditional labor education models suffer from issues such as inadequate alignment with applied talent cultivation objectives, limited teaching resource support, and poor fit with students' diverse needs [1]. The "Three-Color Guidance, Three-Park Interaction, and Three-Entity Co-Education" labor education practice project at Xuzhou University of Technology, rooted in the demands of regional industrial transformation and economic development, explores an innovative path for labor education, offering valuable insights for addressing the aforementioned challenges.

As an old industrial base, Xuzhou is at a critical juncture of industrial transformation and upgrading, with a growing demand for high-quality applied talents. Leveraging its positioning as a "distinctive, high-level, applied" institution, Xuzhou University of Technology actively responds to the needs of the times by launching labor education practice projects aimed at cultivating compound talents suited to regional industrial development needs. With the core mission of nurturing high-quality applied talents, the project serves the strategies of national strength building and national rejuvenation. By constructing a spiral educational pathway of "labor values shaping - practical ability progression - innovation literacy enhancement," it breaks down disciplinary barriers, integrates theory and practice, consolidates internal and external labor education resources, and creates a "real-problem-driven" labor education paradigm. This provides a replicable and scalable "Xuzhou Model" for labor education reform in local universities, facilitating the development of new-quality productive forces and the construction of a high-quality workforce in the region.

## 2. Innovative Exploration of Labor Education Practice Models in Applied Universities

To address the issues of inadequate alignment between labor education and applied talent cultivation objectives, limited teaching resource support, and poor fit with students' diverse needs, the project systematically optimizes teaching content through multi-dimensional linkage [2]. Taking the technological pain points of Xuzhou's leading industries—such as process optimization and intelligent upgrading needs in equipment manufacturing and new energy—as entry points, it collaborates with leading enterprises like Xuzhou Construction Machinery Group (XCMG) to develop modular courses. The project constructs a three-tier ability progression system

of "basic labor skills—specialized technical applications—complex problem innovation." The basic labor skills tier focuses on tool usage and safety regulation education, the specialized technical applications tier emphasizes simulation training of core industrial processes, and the complex problem innovation tier guides students to solve practical engineering challenges through interdisciplinary projects. By embedding real enterprise projects—such as "production line energy-saving transformation" and "intelligent equipment operation and maintenance solutions"—into the teaching process, precise alignment between teaching content and the demands of new-quality productive forces is achieved. Simultaneously, the project integrates practical resources from Xuzhou Economic and Technological Innovation Park, VR industrial scenario training platforms, and Xuzhou's Han Dynasty cultural resources—such as rubbing production and sachet intangible cultural heritage crafts—forming a diverse resource ecosystem of "training base simulated operations + virtual scenario simulated training + cultural project immersion experiences" [3].

The project innovatively implements a "project supermarket" teaching model, establishing three categories of practical project libraries: technological breakthroughs, social services, and cultural creativity. It adopts a mechanism of

"PBL real-problem introduction + enterprise mentor collaborative guidance + AI dynamic growth assessment". The AI dynamic assessment system generates personalized ability profiles by recording student project participation, technical solution innovativeness, and team collaboration performance, providing data support for teaching feedback. Students are supported to autonomously form teams based on their career plans and undertake personalized projects such as "cross-border e-commerce assisting farmers" and "community aging-friendly renovations." Through labor innovation funds, incubation resources are provided for excellent proposals. For example, one student team designed a "livestreaming commerce to assist agriculture" project based on the grape industry needs in Xuzhou's Jiawang District. They participated in the entire process from product packaging optimization to e-commerce channel construction, ultimately significantly boosting local agricultural product sales. This practice constructs a holistic educational closed-loop of "course acquisition—scenario practice—innovation output," ultimately achieving a qualitative and efficient upgrade of labor education from universal skill training to strategic innovation capabilities. The overall research framework is shown in Figure 1.



Figure 1. Overall Framework Diagram

## 2.1 Three-Color Guidance: Values Shaping and Infiltration Oriented Towards Employment

2.1.1 Red - ideological and political empowerment: strengthening value shaping and professional ethics cultivation

At the value guidance level, the school has

innovatively developed distinctive activity modules such as the "Inheriting the Torch" ideal and belief education, "Craftsmanship Skills" cultural practice, and "Embracing Responsibility" spirit cultivation. Through immersive teaching methods such as scenario-based dramas, workshops, and field trips, students construct correct views on labor and

profession within the cultural immersion [4].

In terms of the practical system, the project has built a comprehensive professional literacy development chain: offering core courses in professional ethics to systematically teach workplace norms; hosting the "Crafting Dreams with Ingenuity" lecture series, inviting industry elites to share their professional experiences; and organizing enterprise open days to allow students to personally experience the professional environment. These measures have effectively strengthened students' professional identity and awareness as active participants in employment [5].

It is particularly worth mentioning that the project has innovatively designed a "Career Navigation Plan," providing students with comprehensive career development guidance through components such as professional personality assessments, personalized career planning, and industry-academia collaborative training. Students participating in this program have shown a significant enhancement in career goal clarity and effective improvement in employment competitiveness [6].

After three years of practical exploration, the project has formed a replicable and scalable educational model. Graduate tracking surveys indicate that participating students demonstrate outstanding performance in terms of career stability, job adaptability, and professional development potential, while employer satisfaction remains consistently high.

**2.1.2 Green - ecological integration: fostering environmental awareness and broadening employment fields**

Closely aligned with the demands of ecological civilization construction, the project systematically incorporates sustainable development principles into labor education. By introducing interdisciplinary modules such as "Green Technology Innovation" and "Circular Economy Practices," it guides students to engage with emerging fields like environmental protection technology and green energy utilization. The initiative has nurtured 35 volunteer service clubs, which organize over 100 annual workshops and knowledge-practice lectures. These activities collaborate with 160+ enterprises and institutions—including industry leaders like XCMG Group, Season Group, VV Group, and Country Garden—enabling students to address real-world

ecological challenges. Through projects such as waste classification campaigns and carbon neutrality research, participants not only develop technical skills but also cultivate a strong sense of environmental stewardship. This approach significantly broadens career opportunities in green industries while achieving the dual enhancement of personal growth and social value, effectively bridging labor education with global sustainable development goals.

**2.1.3 Blue - digital transformation: enhancing digital skills and employment competitiveness**

Building upon its established industrial and innovation ecosystems, the project strategically leverages the resources of its School of Industry and Entrepreneurship College to construct an integrated digital-physical educational environment. This infrastructure comprises 38 specialized virtual simulation platforms, 46 technology research centers, and 41 maker spaces, collectively forming a comprehensive technological ecosystem [7]. Through the systematic implementation of digital twin technology, the project has developed advanced virtual laboratories that accurately replicate real-world industrial environments. These facilities enable students to engage in sophisticated practical training—such as designing automated production lines, programming industrial robots, and optimizing smart manufacturing processes—entirely within the digital space. This approach not only allows students to master emerging digital technologies like IoT and AI in a risk-free setting but also cultivates their abilities in systems thinking and cross-disciplinary problem-solving. The acquired competencies in digital modeling, data analysis, and virtual simulation have substantially strengthened graduates' readiness for high-value positions in fields such as intelligent manufacturing, industrial informatics, and digital operations management, thereby significantly improving their employability in an increasingly technology-driven labor market.

**2.2 Three-Park Interaction: Resource Integration and Scenario Linkage through "Campus + Innovation Park + Social Park"**

This innovative model establishes an organic ecosystem for talent development through tripartite collaboration. The campus serves as the foundation for theoretical knowledge impartation and fundamental skill cultivation,

providing systematic academic training. The innovation park functions as a crucial incubation platform, enabling students to transform theoretical knowledge into practical innovations through project-based learning. Meanwhile, the social park offers authentic industrial environments where students can test their solutions against real-world challenges [3]. This tripartite linkage creates a virtuous cycle: academic knowledge from the campus fuels innovation, incubated projects from the innovation park address social needs, and feedback from the social park continuously optimizes campus education [8]. By breaking down traditional educational barriers, this integrated approach significantly enhances students' capacity to tackle complex engineering problems while effectively bridging the gap between academic learning and industrial application.

#### 2.2.1 Campus-based: knowledge acquisition and ability cultivation

As a cradle for nurturing knowledge and talents, the campus continuously supplies innovative and professionally knowledgeable talents to the innovation park. Through resource sharing between the campus and innovation park, it promotes the alignment of theory and innovative projects, achieving multi-dimensional "campus-innovation park" interactions. The resource-sharing mechanism has facilitated specialized lectures and skill trainings, benefiting tens of thousands of students. The jointly built labor education practice platform attracts over 5,000 students annually to participate in practical activities, completing over 10,000 labor works and winning over 2,000 provincial-level and above awards.

#### 2.2.2 Innovation park integration: innovative thinking and practical expansion

As a crucial incubation platform for students to transform theoretical knowledge into practical abilities, the innovation park leverages the resources and channels of the social park to efficiently align project outcomes with social needs. The feedback from the social park also provides directions for project optimization and subsequent incubation in the innovation park, achieving deep "innovation park-social park" linkages. To date, nearly a hundred innovation and entrepreneurship courses have been offered, over a hundred entrepreneurship competitions held, and research and development centers and laboratories co-built with domestic and foreign

enterprises, realizing the commercial application of innovative outcomes.

#### 2.2.3 Social park entry: professional literacy and scenario extension

The social park serves as a practical battleground for aligning students' practical abilities with social needs. Through the linkage model of "campus design - innovation park production - social park piloting," it constructs a multi-win innovation ecosystem. Under this model, the alignment between students' practical abilities and enterprise needs has significantly improved, with employment match rates increasing by 25% and entrepreneurship survival rates reaching 67%. Relying on socialized operations, it has facilitated the stationing of hundreds of enterprise engineers on campus and teachers' secondments, completing over 300 project incubations and applications.

### 2.3 Three-Entity Co-Education: Employment Ability Enhancement Supported by Collaborative Mechanisms

This project establishes a comprehensive collaborative framework that integrates educational resources across "home-school-society" and "school-enterprise-local government" dimensions [9]. Through a four-year progressive approach, it implements targeted educational activities—from foundational habit cultivation in the first year to multi-channel employment guidance in the final year—ensuring continuous development of students' professional competencies. By breaking down disciplinary barriers, the project creates cross-disciplinary courses and practical opportunities that expand students' career horizons. Simultaneously, deep collaboration with enterprises and local governments enables resource sharing and complementary advantages, where universities provide academic support while partners contribute practical elements like technology and management expertise. This mechanism has facilitated the completion of over 1,000 innovation projects annually and accumulated more than 500,000 service hours through social practices, substantially enhancing graduates' employment competitiveness and achieving effective integration between talent cultivation and societal needs.

#### 2.3.1 Love life: "home-school-society" collaborative education

In the first year of university, the project implements "home-school co-education"



practical teaching, initiating a "21-day good habit cultivation" (check-in) action. In the second and third years, it conducts "school-society co-education" practical teaching, organizing events such as "campus labor experts" selections and "labor skill competitions." In the fourth year, it provides comprehensive "home-school-society" practical teaching, offering multi-directional and multi-channel employment guidance.

#### 2.3.2 Cross-disciplinary: multi-disciplinary collaborative education

The project implements a labor education strategy of multi-disciplinary collaborative education, breaking down professional barriers and broadening students' employment fields. It offers cross-disciplinary labor education courses and projects, opening up professional selection channels, and cultivating applied talents with both professional and labor skills. Simultaneously, it organizes social practices and volunteer services, with over 80,000 student participations and cumulative service hours exceeding 500,000, enhancing students' social responsibility and practical abilities and supplying the diverse employment market with laborers possessing humanistic qualities.

#### 2.3.3 Enter society: "school-enterprise-local government" collaborative education

The project incorporates internship and training base second classrooms into the talent cultivation plan, stipulating that innovation and entrepreneurship training and disciplinary competitions based on practical teaching must account for no less than 2 credits. Responding to enterprise and societal needs, the university takes deepening cooperation with enterprises and institutions as a key breakthrough, seeking mutual benefit points. The university invests resources such as faculty, students, and equipment, while enterprises and institutions participate in differentiated talent cultivation for professional clusters using elements such as capital, technology, projects, facilities, and management. Both parties engage in in-depth cooperation in scientific research, innovative technologies, employment and entrepreneurship, and social services, jointly facilitating student growth. Relying on "school-enterprise-local government" joint education, students autonomously declare and complete over 1,000 innovation and entrepreneurship projects annually, with school-enterprise collaborative guidance in disciplinary competitions winning

over 500 provincial-level and above awards, further broadening cooperation spaces with enterprises and local governments [10].

### 3. Educational Outcomes

Through years of exploration and practice, the "Three-Color Guidance, Three-Park Interaction, and Three-Entity Co-Education" labor education system developed by Xuzhou University of Technology has yielded remarkable results. This system has reshaped the educational ecosystem through three dimensions: value guidance, resource integration, and mechanism innovation, achieving breakthrough progress in talent cultivation quality, depth of teaching reform, and breadth of social services. At the systemic level, it has established a long-term mechanism centered on labor values education with multi-stakeholder collaborative education; in terms of demonstrative effect, the innovative practice model provides a replicable paradigm for similar institutions; regarding functional expansion, it realizes deep integration of educational and industrial chains. This systematic reform not only effectively enhances the alignment of applied talent cultivation but also offers a scalable practical approach for labor education in the new era, forming a new educational pattern characterized by a virtuous cycle of mutual reinforcement between educational supply and regional development needs.

#### 3.1 System Reshaping Stimulates Educational Vitality

By constructing a holistic talent cultivation model, teaching quality has significantly improved. Students have been guided to win 118 national-level innovation and entrepreneurship projects, 17 provincial-level projects, 23 various competition awards, and published 20 papers. The graduate employment rate has remained above 95% for consecutive years, with outstanding alumni such as Song Qinghe, a physical fitness coach for the national women's handball team, and Wang Xiangyang, a technical backbone at State Power Investment Corporation.

#### 3.2 Innovation Leads Demonstration and Radiation

Through systematically advancing teaching reforms, this project has achieved remarkable results in curriculum system restructuring, teaching methodology innovation, and evaluation mechanism optimization. To date, it

has secured over 50 provincial-level teaching reform projects spanning emerging fields such as intelligent manufacturing, green engineering, and digital technology. By implementing a "tiered" faculty development program, 12 high-level teaching teams with interdisciplinary backgrounds have been established, including 5 faculty members selected as provincial "Blue Project" academic leaders and 14 recognized as provincial "333 Project" technical leaders. These key teaching professionals have played significant roles in promoting the deep integration of industry, academia, and research, leading the development of over 20 industry-education integration courses and establishing 3 provincial-level virtual simulation experimental teaching centers [11]. The project's innovative practices have been promoted nationwide through the Higher Education Labor Education Guidance Committee of the Ministry of Education, generating extensive demonstrative impact and providing replicable practical experience for similar institutions in educational reform.

### 3.3 Function Expansion Serves Society

The project constructs a multi-functional labor education platform, conducting over 35,000 hours of practical activities annually. It assists in rural revitalization, completing projects such as environmental improvement in Xuzhuang Town and the construction of a digital library in Pan'an Lake. The designed rice paddy landscapes have become popular check-in spots, driving rural tourism development and receiving continuous mainstream media coverage, forming scalable demonstration experiences.

Guided by the demands of new-quality productive forces development, the project reconstructs the applied talent cultivation system through labor education, injecting multi-dimensional value into educational innovation, social services, and individual development. At the educational innovation level, it creates a "labor+" cross-disciplinary course cluster and a "school-enterprise-local government" collaborative practice platform, addressing the challenge of industry-education disconnection and cultivating compound talents suited to regional industrial upgrading. It directly serves the transformation needs of Xuzhou's old industrial base and the industrial upgrading demands of the Yangtze River Delta, forming a benign ecosystem of "education supply -

industrial demand - economic feedback." From the perspective of individual development, it pioneers a "six-dimensional radar chart" growth tracking system, enhancing students' employment competitiveness by 12.5% through a full-cycle cultivation pathway, promoting the transformation from "job seekers" to "creators." Its deeper value lies in the profound integration of Han Dynasty culture and industrial heritage, activating traditional culture through practices such as digital restoration, forming a replicable "localization" labor education paradigm. The project constructs an ecosystem of benign interaction among the education chain, talent chain, and industrial chain, providing a demonstration sample for labor education reform in applied universities in the new era.

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